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ABSTRACT

Schools in Great Britain can respond to the current demands of industry, government, and technological advancement and at the same time maintain their own priorities: critical thinking, a concern for values, and access to noncommercial forms of cultural expression. Because of the economic crisis, schools are being urged to help produce a work force with the qualities and skills needed to make Britain competitive in a world of high technology. Economic survival has become a major goal and many educators, business people, and government officials call for a curriculum that would develop technological capability together with a cluster of attitudes and beliefs appropriate to an industrialized democracy. Educators are encouraged to employ new teaching aids (e.g., computers), develop new topics, and teach new skills. Current responses to these challenges include a project on technology and change at York University, collaboration between schools and industry, and experimental social education courses focusing on the role of information in a modern society. Related to these projects is the need to provide special training for educators. Yet, given adequate communication and regrouping of forces within education, the core curriculum can address both economic survival and individual well-being, capability and a critical spirit, skill and understanding, and social competence and moral autonomy. (KC)

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TECHNOLOGICAL CHANGE AND SOCIAL COMPETENCE

by

Robert Irvine Smith
University of York, U.K.

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Paper presented at the Annual Conference of the Social Science Education Consortium (Athens, GA, June 8-11, 1983).

TECHNOLOGICAL CHANGE AND SOCIAL COMPETENCE

Paper for the annual conference of the Social Science Education Consortium at the University of Georgia, Athens, USA, 8 - 11 June 1983

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TECHNOLOGICAL CHANGE AND SOCIAL COMPETENCE

INTRODUCTION

On Friday afternoons in the Shankill Road, an area of Belfast blighted by economic and political failure, Everton Girls' Secondary School prepares its pupils for life in the post-industrial society. Those 14 and 15 year olds who "have chosen not to sit formal examinations" are taken to the local Leisure Centre (recently built at a cost of two and a half million pounds), where, in the words of the Guardian reporter,

> "They are trained for a life of leisure. They can swim, play squash, netball or table tennis...The girls who aren't interested in sport...are trained to use the sauna and sunbeds. Preparation for life caught between the giant jaws of a sunbed. A life with your body golden brown and your mind pale white...".
>
> (Beattie, 1983)

That is one way of responding to the challenge of technological change. Fortunately, there are others, and it's the others I want to illustrate and comment on in the second part of this paper.

Before presenting examples of innovative work I shall consider ways in which technological change is being interpreted to the schools, and the new priorities that are being urged upon them by government, industry and pressure groups. How schools respond to the demands of society must depend at least in part on how those demands are presented to them. And society is clearly asking them to do more than train teenagers in the peaceful uses of leisure time.

PART ONE: NEW PRIORITIES FOR EDUCATION

1.1 Messages to schools

During the past five years the microelectronic revolution has been brought to the attention of the British public in a spate of television programmes, conferences and publications. The Government designated 1982 'Information Technology Year', and appointed a minister to promote I.T. Central funds were made available for schools to buy microcomputers and related hardware, and a national scheme was set up to train teachers in their use.

Familiarizing teachers and pupils with some electronic devices is, however, only part of the story, though clearly a necessary part. There is a broader message, less specific, more disturbing, more controversial, and infinitely harder to operationalize: that education must help the nation make a successful transition through a stormy period of technological change (see C.E.T. 1978 and Gosling 1979).

I wish to tease out two strands from the tangle of argument, one to do with the economy and the other to do with individuals. Schools are being urged

- first, to help produce a workforce with the qualities and skills needed to make the Britain competitive in a world of high technology;

- second, to help people cope with future shock.

Neither task fits comfortably into the present school system, and both raise fundamental questions about social values and educational aims. Schools have reacted with understandable caution. Before introducing what might be irreversible changes, teachers are anxious to see more clearly what exactly the demands amount to, to sift out the well-based predictions from the futurology, to examine the value implications behind apparently objective economic arguments, and to decide what types of response might be appropriate, feasible, and acceptable both to themselves and to the communities they serve.

1.2 Whose in-tray?

Before pursuing the dialogue further it is important to avoid creating a misleadingly bland picture of Education listening and responding to the voice of the Nation. Nothing in our decentralised system is ever that tidy. There are many voices claiming to speak for the nation, for the economy, for industry. And at the receiving end of these messages there are problems of responsibility, making "the schools" an elusive target. Whose pigeonhole does the memorandum go in? Which departmental head should attend the conference on post-industrial society? As a demand for competence in technological, economic and social matters the message is directed at teachers of all subjects, including those responsible for social education. And what is everybody's responsibility can become nobody's.

Even to speak of a sub-set of teachers "responsible for social education" suggests a professional coherence that does not exist in Britain. The phrase "social education" means different things in different schools: special programmes for the less academic, some

aspects of the pastoral system, work with the local community, industrial liaison, vocational guidance, health education, courses in the social sciences, History, Geography, Home Economics, Commerce...

Schools are not in the habit of considering what their students are learning about society, or what social skills and attitudes they are developing, across the subjects of the formal curriculum. If we add the social skills and attitudes learned in the informal curriculum - the clubs and other voluntary work to which many schools attach great importance - and the unintended social messages of the hidden curriculum, then the task of curriculum review is formidable indeed. Syllabus reform, within existing subject departments, is so much more manageable.

Schools that tried, in response to earlier pressures, to monitor language across the curriculum are all too aware of the difficulties of shifting the focus of concern from individual subjects to the whole curriculum. Even where a review has been successfully conducted, as at Hele's School, Exeter, there can be severe problems in implementing and sustaining reforms where these run counter to the school climate and where adequate support systems do not exist (Cloke 1980 p 144). But it is precisely this type of comprehensive review that is required of schools as a response to the far-reaching changes that I.T. brings, as the Schools Council report "Personal and Social Education in Secondary Schools" points out (David 1982, p 12).

There are some positive signs. A series of publications on curriculum planning from the Schools Council, HM Inspectorate and the Department of Education and Science has to some extent prepared the ground. Some schools have given senior staff responsibility for overall curriculum development; some have set up new organisational structures - staff working parties, curriculum planning groups, broad faculties of, for example, humanities or social education - which provide a wider forum for discussion and policy making. Difficulties of communication remain, but schools are more able to receive and consider messages from outside in 1983 than they were ten years ago.

I shall now consider these messages - about economic survival and individual well-being - in more detail.

1.3 The needs of the economy

Economic survival, it is argued, must come first, because without it individual well-being is in jeopardy. The Chief Education Officer of Sheffield, an area badly hit by the recession in the steel industry, addressed a conference of teachers in these stark terms:

> "When we talk about the risk of not surviving economically we talk about the risks of disaster - political revolution, destruction of our society, collapse of our culture, betrayal of our history...all deeply serious and moral issues. Speaking as an educationist I regard it as vital to get a consciousness of the seriousness of our economic position over to all heads of schools...so that they are in a position to see that the curriculum planning of their whole institution takes account of it."
>
> (Harrison 1979)

Following preliminary barrages of this sort have come a number of thrusts in different sectors of the front. I wish to examine two of these that are particularly relevant to social education: first, a broad argument about social attitudes; second, a related but more sharply focussed proposal for work-related social skills teaching in schools.

1.3.1 Industrial culture and the idea of "capability".

The argument for new attitudes to technology is older than the silicon chip. The Great Debate on industry and education was initiated in the distant days of the last Labour government, by James Callaghan, in his Ruskin College speech of 1976. A collection of essays published in that year under the title "Hidden Factors in Technological Change" (Semper & Coggin 1976) gives a picture of the arguments developed in the early 'seventies, and illustrates efforts in schools to change students' attitudes to technology and industry.

The difference in 1983 is that the factors are no longer hidden, and the impact of technological change is crudely visible on all sides. It is widely argued that recovery depends not on reviving old industries and ways of working but on developing new ones, that it demands a creative effort comparable with that of the first Industrial Revolution, fired by the same conviction and commitment. Recovery is thereby presented as a matter of social attitudes rather than one of government or industrial policy.

This allows blame to be shifted to education, which is held responsible for encouraging social attitudes which deflect the young - in particular, the talented young - away from practical, wealth-producing work. What the young have learned from their experience in school about the relative value and interest of academic and practical activities, of arts and sciences (and within sciences, of pure and applied studies) has contributed to Britain's economic decline.

The case is vigorously made by a pressure group called "Education for Capability", based at the Royal Society of Arts, with wide support in industrial, political and even Royal circles. The group takes full-page advertisements in daily newspapers (The Times and The Guardian, from February 1980) to publish its manifesto, which argues that

> "Those who study in secondary schools or higher education increasingly specialise; and normally in a way which means that they are taught to practise only the skills of scholarship or science; to understand but not to act. They gain knowledge of a particular area of study, but not ways of working which are appropriate outside the education system...

The exercise of personal capability, which provides satisfaction as well as contributing to the economy, is not only undervalued: it is actually inhibited by the present system of education, which

> "...stresses the importance of analysis, criticism and the acquisition of knowledge and generally neglects the formulation and solution of problems, doing, making, and organising; in fact, constructive and creative activity

of all sorts...

> We believe that education should spend more time in teaching people skills and preparing them for life outside the education system; and that the country would benefit significantly in economic terms from this re-balancing towards education for capability."

Prizes and other forms of recognition are offered to schools for new courses and projects that contribute to the overall aim, which is to bring about a significant change in British culture, rapidly enough to save the British economy.

The group draws on the work of cultural and economic historians such as Raymond Williams (1961), Corelli Barnett (1972), and Margaret Gowing (1976) to expose the roots of the problem. The balance between academic and practical education swung at the end of the nineteenth century away from the practical values of the Mechanics' Institutes, toward the gentlemanly ideals of the Public Schools, which were aped first by state grammar schools, and later by comprehensive schools. The culture of the Institutes was and still is appropriate to a manufacturing nation in an increasingly competitive world. Kenneth Adams made this clear to a teachers' conference organised by the Royal Society of Arts:

> "...these excellent developments in education for capability, education in making things and making things work, were thwarted by the powerful and influential educational elite who believed that thinking about ideas was superior to thinking about things...
>
> Our education system came...to emphasize the values of beauty and truth and to undermine those values which sustained belief in the virtues of industry and commerce."
>
> (R.S.A. 1983)

We may wonder if this interpretation of recent history is the last word on the matter: there may be other causes for Britain's economic decline, other forces at work in our society which influenced both education and industry. We may want to ask questions about the distribution and exercise of power and the relationship of social classes during the century, and base our current policies on an analysis of this kind rather than on one which focusses on education and leaves out politics. We may also entertain a nostalgic regard for "thinking about ideas" and for "beauty and truth", and wish to see these ideals sustained somewhere in the state comprehensive school system. But the diagnosis is clearly persuasive, and the remedy seems to follow logically: what education has done education must undo, or, more modestly, what education helped to do it must help to undo. A headmistress at the same conference brought the message home to her colleagues: "In a time of economic recession and increasing international competition it is vital that some of our brightest youngsters should cease to shun a career in industry."

The anti-industrial culture may prove resilient, but the attack is mounted by a formidable coalition. For one of the strengths of the "capability" argument is that it wins friends all the way across the political spectrum. At one end, it attracts those who wish to select

and train a technological and entrepreneurial elite, committed to the work ethic, competition, profit and other Victorian values (whose restoration is urged by the Prime Minister). But it also appeals to reformers who have battled for years against the meaninglessness, sterility and irrelevance of academic courses, and who campaign for a core curriculum that will match the ideals of the comprehensive school related to the common life.

In a Royal Society of Arts lecture tracing the historical roots of Britain's malaise in the way I have described, Professor Denis Lawton called for a curriculum based on a common culture and nourished by radical working class traditions. He identified two key features of modern society - democracy and industrialisation - and outlined a curriculum that would develop technological capability, together with a cluster of social attitudes and beliefs that would be "appropriate" to an industrialised democracy. These included an attitude towards work that would be "neither Romantic, Utilitarian or Marxist", but "genuinely twentieth century" (Lawton 1979). Who could argue with that? The Great Debate, started by a Labour government, continues under a Conservative one without any noticeable change of direction. The speech I quoted by the Chief Education Officer of Shetfield, a city in what has for many years been referred to as the Socialist Republic of South Yorkshire, could be almost exactly matched by statements from the Confederation of British Industry and Conservative ministers. Is this the end of ideology? A rebirth of the Dunkirk Spirit?

It seems more likely to be a temporary detente, based on a common interest in economic survival, between groups of people who have very different visions of the good society. Sooner or later the perennial questions will be asked and the idea of "capability" will be seen as an incomplete answer. For "the culture of doing, making and organising" does not offer us much help in deciding what to do, make or organise, for what purpose, for whose benefit, under whose control. It lacks something essential to the concept of culture: criteria by which to judge ends as well as means.

I shall return to the missing dimension of values later: for the moment, my point is that whatever one's reservations about the message, it is becoming accepted as a truism in educational circles. The "capability" campaign has helped to prepare our minds for the vocationalism which the government is pressing upon British schools. Sir Alex Smith, former Director of Manchester Polytechnic, summed up the argument at a conference earlier this year, and there was no dissent: "We need an educational system to match our industrial culture." Other educationists, such as Professor Tom Stonier of Bradford University, who has campaigned vigorously in the schools for the past five years, would go one step further and seek to match our developing post-industrial culture. Some industrialists dislike this phrase, arguing we are not there yet. But either way, the schools are being told by Left and Right, by unions and employers, by progressives and reactionaries, by historians and futurologists, that they are in the front line of a cultural battle on which our economic survival depends.

1.3.2 A skilled workforce

Alongside these broad demands for a change in the culture of schools have come more specific proposals for curriculum changes, relating to the needs of a high technology economy for workers with the right sort

of skills. While some of these are directed at science, computer studies and commerce departments, others have implications for social education.

New teaching aids. All departments, including social studies and humanities, are urged to use microcomputers as teaching aids: for example, geographers for the analysis of spatial and demographic data, historians for census returns, economists for macro-economic simulations, teachers of English for creative writing by word processor...

The applications are endless, and the justification double-barrelled: not only will students move more quickly and excitingly among the data of the subject, without the tedium of tallying the parish records or calculating the economic effects of a tax increase, but they will also, incidentally, be making themselves familiar with modern information processing devices and methods. This will help to remove inhibitions and blockages, and prepare the way for subsequent training as skilled workers in tomorrow's industries.

There is no serious threat here to the teacher or to traditional academic subject-teaching. Provided the software is cheap enough, of good quality, clearly documented, and relevant to the syllabuses of public examinations, its use can only enhance the subject while simultaneously achieving the new objectives.

New topics. Only slightly more difficult to accommodate within traditional thinking and practice is the demand that the I.T. revolution should be reflected in the selection of subject matter within History, Geography and other social studies courses. The difficulty is that some older topics must be scrapped or greatly reduced: always a fairly painful process, but not one that requires profound change in the teacher or the school.

It has been suggested, for example, that History courses should pay more attention to the role of information in political and social developments, and teach the Industrial Revolution as the beginning of a continuous and accelerating process, rather than as something which can be neatly contained in a nineteenth century textbook. Geographers may need to revise their teaching on industrial location, and Economists on factors of production and comparative advantage as the knowledge industries expand.

The British Computer Society recommends that humanities and general studies programmes should find a place for topics such as 'Computers and People', 'The Effects of the Cashless Society', 'Artificial Intelligence', 'Computers and the Economy', and 'Computers and Employment'. These are among the 16 topics which the society wants to see in the common core of the secondary school curriculum (BCS 1980). The remaining topics (such as 'The Automatic Control of Processes', and 'Coding Systems') would be injected into science and mathematics courses.

New skills. A third element in the vocational argument concerns the transferable skills that workers need in the information age. There are some surprises here - and some threats to traditional thinking about subjects, methods of learning, and public examinations. The Further Education Curriculum Unit, for example, quotes research evidence from industrial employers, who criticise the products of traditional school courses on the following grounds:

"What appears to be lacking in many young people is the ability to apply with discernment school-based competencies to day-to-day working problems. This raises the question as to whether at school level the curriculum for most young people is too pre-occupied with content related to conventional examination syllabuses, and not enough emphasis or time is given to mastery of core skills making transferability to common day to day problems more likely. There is little doubt that with the new information technology the immediate availability of data will require basic competencies in communication...

...Employers give considerable weight to characteristics such as versatility, initiative, pride in workmanship, conscientiousness, timekeeping etc... Such characteristics do not readily lend themselves to conventional examining...There is little doubt that an undue emphasis on content and academic success prevents many young people from receiving adequate counselling in social, life, work and entrepreneurial skills."

(F.E.U. 1982)

Eric Bates, Head of the Education Unit in the Department of Industry, questions academic scholarship itself, that holy of holies on which most heads of department in British schools base their professional identity and self-esteem:

"The pursuit of academic distinction, of 'scholarship'...has been universally accepted as an end in itself. It is only in recent years that some have begun to question whether this emphasis is in the best long-term interests of the country and of pupils...Many of the qualities a young person needs are neither taught nor examined. For example, leadership, the ability to work within a team, to communicate verbally, to understand the importance of achieving time deadlines, of cost effectiveness and working under stress...of finding the best possible solution to a problem, often with incomplete or imperfect data..."

(R.S.A. 1983)

Curriculum development to foster these skills, and to explore their assessment in the form of profiles rather than subject examinations, is advancing rapidly in Further Education, with substantial help from the Department of Industry. The repercussions are being felt in schools. One effect is to force teachers to think again about their stereotype of vocational education as a crude and de-humanizing process, whereby students are force-fed with specialised knowledge narrowly related to the work they may do on leaving school. For this description may apply to what goes on in many schools, under the guise of scholarship, where students are force-fed with specialised knowledge to achieve the grades that may win them a university place. By contrast, the new vocational education can be presented as humane, student-centred and life-related.

The Further Education Unit publication "Developing Social and Life Skills" defines its field as

> "Curricula whose objectives have been primarily derived from a real or imagined analysis of the social demands made on people at work and in the everyday requirements of life in the community, rather than curricula whose objectives have been primarily derived from the basic tenets of the relevant academic subjects."
>
> (F.E.U. 1980)

In this and its earlier paper "Experience, Reflection, Learning" (1978) the F.E. Unit is proposing a learning model which Professor Walter James, of the Open University, argues is

> "The nearest we have yet approached to the Freirian model of experience of a situation, reflection on the experience, and action on the situation."
>
> (James 1980)

The new vocationalism may contain other, less liberal elements, and James may be over-estimating the radicalism of the Department of Industry. But it is interesting that reformers of social education in schools should find support from this unexpected direction in their struggle to shift the emphasis from teaching to learning, from facts to skills, from passive note-taking to active study methods, from arcane subject-matter to issues in the students' own world, from the inert to the meaningful. The reformers have never been primarily concerned about creating a skilled workforce: their concern is for the well-being and social competence of individuals. But there is common ground to be explored. The needs of the economy may not be so different from the needs of its individual members.

1.4 The needs of individuals

Supposing it were possible to develop in school pupils those skills that are being identified as keys to economic survival, and supposing these skills could be made genuinely transferable from one human situation to another - two propositions that need careful research - would individuals need anything else in their personal survival kit for the information age? The flexible, co-operative, problem-solving workers of tomorrow, with their capacity for holistic thinking, their positive attitude to change, their zest for learning, their initiative, their practical capability, their social and communication skills, are already more than half way to personal and social competence. What else is needed to help them cope with technological change?

Two types of answer emerge from the current debate, the first focussing on democratic participation, the second on private life outside the workplace.

1.4.1 Citizenship and technocracy

In a Council of Europe paper, Professor Andre Lebeau makes the connection between technological change and political education. He points to "inadequacies in the education and information of the peoples making up the Western democracies". The complexity of technological issues, and the "intermingling and interactions of systems" have

brought about a dangerous situation. "Decisions involving contemporary society have become impenetrable to the average citizen." His optimistic conclusion is that information technology, properly applied, coupled with public education in its use, could make it possible for the individual "to re-establish proper relations with the technology oriented society in which he lives" (Lebeau 1981).

As with Alvin Toffler's vision of political life in an information age (Toffler 1980: in particular, the two final chapters) one is forced to ask how such a happy condition would be brought about. It is hard to imagine in Britain today the development of public databases giving citizens access to full and undoctored information about such techno-political matters as the argument over cruise missiles and the nuclear balance, or the destruction of the countryside by farmers subsidized by the Common Agricultural Policy, or the truth about nuclear power.

Whether such a utopian information service is brought into being or not, there is still a need for public education in the use of whatever system does exist. The argument applies as much to newspapers and television as to electronic databases: there is always a need for independent agencies of education to create a critical clientele, skilled in defeating attempts to pull the wool over its eyes.

This is not a task that can be left to those who control the information systems. They have their own interests, their own way of interpreting the world. Len Masterman, in "Teaching about Television", shows the need for media education and suggests ways of developing awareness in school pupils of how even the most 'factual' documentaries or news programmes are artificial constructions, built around the values of the producers or their employers (Masterman 1982).

As other branches of I.T. offer their own constructions of reality, similar efforts will be required to create sophisticated and wary users of databases, skilled in detecting bias in both the selection of data and in the organisation of retrieval procedures. For anyone who compiles a set of keywords or devises a search tree for a database is shaping the way a future user will think, as surely as a television producer is selecting a view of reality and dumping alternatives on the cutting room floor. In both contexts the result has a bogus objectivity: the "value-free" collection of mere data which only becomes information when it is accessed; the television camera that claims to be a neutral "window on the world".

One answer, then, to the question of what else is needed in the survival kit, is this extra dimension of critical awareness. But it is not a quality that generally appeals to employers, even when they are looking for the sort of socially skilled worker that Eric Bates describes. They want problem solvers who will operate within agreed boundaries set by overall company policy. A democracy needs citizens who will question policy assumptions, see through the rhetoric of "national interest", reach out for totally new ways of looking at problems, ask thoroughly awkward questions about aims.

These qualities are especially needed in a society that is undergoing rapid technological change, to counter the technological imperative, to avoid naive faith in 'the technical solution' to every problem, and to make sure that the social cost of technological change is fairly spread in the community. Information technology can be used to support

totally different sets of social goals, to manipulate or to liberate, for "the control of disorder" or "the management of diversity" - the distinction made by Mowshowitz in "The Conquest of Will". He foresaw a time of crucial and irreversible choice for technological societies as information processing became more sophisticated, and warned that the new technology could bring

> "...the abrogation of community responsibility and...the exercise of overwhelming power by legitimately constituted governments. We have already compromised our responsibility for making informed judgements on many matters of local and national policy by deferring to so-called 'experts'. The next step, if taken, would constitute a dangerous extension of the Hobbesian social contract."
>
> (Mowshowitz 1976)

It is just possible that some spokesmen of government and industry have in mind the probing and radical spirit of critical citizenship when they talk about preparing students for participation in a changing society. But there are signs that something safer and more limited would be preferred in these quarters. Lifeskills tutors have been discouraged by their government funding agency, Manpower Services Commission, from tackling political issues (The Guardian, 29 Nov and 8 Dec 1982). Science teachers who introduce the social and economic implications of science (such controversial issues as nuclear power, nuclear war, genetic engineering and chemical pollution) have been criticised for straying into "tendentious" matters by Sir Keith Joseph, Secretary of State for Education (in his comments on draft national criteria in Physics, April 1983). H.M. Inspectors advise schools to promote "informed and responsible political participation" (D.E.S. 1977), but "responsible" is a word that can be used to set questionable limits on discussion, and to protect political assumptions from critical scrutiny. "Revolution is required", said a Director of Pilkington, a large industrial company, in a discussion of education for worker participation in industry, but went on to make it clear where he would draw his line: "Employers, by refusing reform, have played into the hands of those whose object is revolution of a political nature" (R.S.A. 1983). The consensus between industry and social studies reformers in schools is at its most fragile when it comes to developing genuinely critical skills in the young.

1.4.2 Private life in post-industrial society

The second type of proposal focusses on the everyday lives of individuals rather than on their economic or political roles. The concern is for the survival of self-esteem, a sense of purpose, and satisfying relationships with others. As with the demand for a more practical education, what seems to be happening here is that a familiar and long-standing set of educational aims, associated more with reformers than with mainstream educators, is being moved into the centre of the stage and given a new urgency.

The Schools Council Working Party on Personal and Social Education which I mentioned earlier (David 1982) noted the increased activity of schools in this area of concern and attributed it to

> "The complexities of a changing society...the fact that

> the speed of change in our society is accelerating and confusing our planning and purpose...the rapid expansion of knowledge, the growth of media influence...and increasing uncertainties in the world of work."

The report argues that personal and social education cannot be achieved in an ad hoc manner, or by dependence on the ethos of the school alone, but requires "constructive thinking and planning, and properly structured programmes." Progress is uneven, and many schools are slow to review their work. In some

> "Pastoral care and personal and social education appear to have been devised merely to contain a difficult age group and to enforce discipline and social control, rather than with more positive and imaginative aims in view."

After surveying attempts to define the field, the report offers its own definition:

> "Personal and social education includes the teaching and informal activities which are planned to enhance the development of knowledge, understanding, attitudes and behaviour, concerned with:
>
> - oneself and others;
> - social institutions, stuctures and organisation;
> - social and moral issues."

Making little use of the concept of skills, and regarding the behavioural objectives model as tending towards indoctrination, the report emphasises processes and procedures of personal decision-making, and aims to increase awareness and understanding of self and of other people, self-confidence, and appreciation of responsibilities towards others. It stresses the need to relate the content of courses to the personal experience of students, "Whose feelings and opinions matter".

Very different in style, more specific about student performance, and more committed to the idea of skills training, the manual for tutors "Lifeskills Teaching" by Hopson and Scally (1981) illustrates a movement developing strongly in further education and beginning to influence schools. They, too, make an explicit connection with technological change, devoting their first chapters to an account of post-industrial society, its dangers and opportunities. They urge schools and colleges to assess their present curricula as a relevant preparation for post-industrial life, and they spell out significant features of this new society which teachers should take into account in replanning curricula:

> "Providing and receiving knowledge and skills is the most rapidly growing area of the economy...
>
> There will be chronic unemployment judged by traditional norms and values.
>
> We will have to move toward a new concept of work...a new concept of career...a changed concept of the welfare state...
>
> There will be an increase in discretionary time for

everyone, but more for some than for others...

We are already living in an era of 'overchoice'...

Personal relationships will be more temporary...

There will be a demand for a more adaptable labour force and for people who when unemployed can excercise initiative and generate commitment...

People will need a greater range of personal competencies than ever before."

(Hopson & Scally 1981, pp 7 - 24)

For some commentators the problem of structural unemployment is of overwhelming priority. Unlike the more speculative features of the new society, it is already here, and having a serious impact on schools, especially in those areas where the majority of leavers go directly on to state welfare rather than to a job. The Council for Educational Technology, in its widely distributed paper on microelectronics, asked bluntly, "What can we do to help people to fill their leisure hours - whether the result of a reduced working week or the enforced leisure of unemployment?" (C.E.T. 1978).

Put that way, as a problem of filling time, the question leads to the sunbeds and saunas of the Shankill Road. The deeper question for schools - to which education for leisure is not the answer, though it may form part of the answer - is how to maintain a credible educational service when the connection between schooling and employment has been severed. And I mean credible both to teachers committed to an ideal of education and to the clients; a service that generates commitment and enthusiasm among students and staff, and is valued by the community. What have the schools to offer that people actually need?

Schools have always claimed to do more for students than prepare them for getting a job. Marketable qualifications were important, certainly, but what about initiating children into the forms of knowledge, developing their rationality, sensibility and moral awareness, extending their range of interests, broadening their cultural horizons, building a sense of community, refining, civilizing, enriching their lives? Was that no more than educators' sales talk?

When there are no jobs, when the long-deferred gratification does not materialize, or is deferred for yet another year as the student moves from school into a government scheme for unemployed leavers, that claim to provide something more than a passport to a job is put brutally to the test.

1.5 Two sets of priorities

Admittedly, the "something more" has often been more evident in Speech Day rhetoric than in daily practice. The challenge from outside has prompted some schools to examine the gap between rhetoric and reality, and to define new priorities for themselves.

Among these are some educational tasks, essential in a humane society, especially during a period of technological change, which schools must take on because no other agency will: such things as helping pupils

to think critically about controversial issues in the real world; to be aware of alternatives to received opinion and "official" perspectives; to become skilled at handling values as well as systems, morality as well as efficiency, ends as well as means; to appreciate non-commercial forms of culture, and to express personal creativity in ways that contribute nothing to the Gross Domestic Product.

These are not the priorities that are being urged on schools by government and industry; courses embodying them are not likely to attract support from the billion pounds the Department of Industry will be injecting into education in the coming year.

Schools are thus in the tricky situation of responding to demands from outside while attempting to re-define and defend some priorities of their own. Their position is weakened by the fact that the unreformed academic curriculum does not convincingly achieve the aims of critical thinking, values education and creativity. They are fighting a battle on two fronts.

PART TWO: SCHOOL RESPONSES

2.1 Sources

In illustrating ways in which education is responding to the challenges outlined in the first part of the paper I shall draw mainly on the work of teachers associated with York University, who have been exploring the issues we are addressing today in research studies, curriculum projects, conferences and innovative courses.

A project on Technology and Change based in the Education Department worked with schools in the region, and is now collaborating with the Centre for the Study of Comprehensive Schools, also based at York, in the compilation of a database of good practice to which schools will contribute and have access. Teachers have also contributed reports of their work at a series of York conferences on technological change, and several have carried out enquiries in the region as part of their work for a higher degree in Education.

2.2 Teachers' views

In a study of Yorkshire schools in 1982 Chris Mitton explored senior teachers' awareness of, and attitudes to, the emerging post-industrial society and its implications for schools (Mitton 1982). He found teachers were willing to develop curricula and methods appropriate to a changing society, but felt ill-equipped to evaluate the social and economic forecasts, or to convert the broad demands for educational reform into sustainable changes in their practice. The study showed a marked discrepancy between what teachers felt ought to be done and what was actually happening in their schools. Among the tasks they accepted for schools, but found hard to operationalize, interviewees mentioned the following:

> "To reflect the world as it is outside schools today.
>
> To enable children to adapt to different circumstances and change their lifestyle.
>
> To develop information handling skills including the ability to exploit information technology to find out what they want to know.
>
> Personal and social development.
>
> Emphasis on skills rather than the acquisition of knowledge.
>
> The creative use of leisure.
>
> Making children aware of the benefits and dangers of technology.
>
> Encouraging children to be self-critical, self-motivating and practical."

Teachers saw themselves as directors of the learning process rather than as providers of information; traditional subjects were not necessarily the best way of organising the curriculum, "and might even

disappear".

A conference of 150 teachers at York University in 1981 on "Technological Change and the School Curriculum" concluded that:

> "Teachers of all subjects should contribute to pupils' awareness of the possible consequences - good and bad - of accelerating social change. They should seek to develop in pupils flexibility and adaptability, the ability to handle uncertainty, and a positive attitude to change. They should use their subjects to develop skill in analysing and solving complex real-life problems...
>
> Most of the changes that members wanted to see were those improvements in content and method that reformers had been arguing and working for since the 1950's, e.g. more emphasis on concepts and ways of working rather than factual knowledge, more cross discipline study...more active and inventive learning by pupils and less one-way lecturing by teachers, more group work, discussion, simulation, and attention to study skills, more experience out of school and more imaginative use of adults other than teachers. These proposals are familiar enough: what is new is the singer not the song. Teachers are now seeking what formerly was recommended by curriculum projects...
>
> In common with other workers in the information industries, teachers must be prepared to handle uncertainty in their own work. The curriculum for which they are responsible is developing away from the areas of subject matter within which they are accredited experts. The emphasis must shift from subject-matter knowledge to skill in helping pupils learn."
>
> (York 1981)

Another group at York in the same series of conferences and workshops have planned the 1983 conference around the theme of "Social Education in a Technological Age", and have identified 8 problems for discussion. Four of these are to do with school policy - defining social education, planning it into the curriculum, managing the hidden curriculum, and involving the local community - and four to do with the classroom - identifying pupil skills, developing appropriate methods, helping teachers who move into unfamiliar territory, and finding ways of assessing pupils and evaluating courses (York 1983).

2.3 Industry as catalyst and resource

An important influence on social education in the past few years has been the development of collaboration between schools and industry. The aim was initially to promote a better understanding of industry, but the movement is having unexpected repercussions.

Most towns could provide illustrations. A York project to promote active learning through links with industry is currently monitoring experimental work in four schools and one factory. Among the school initiatives are social education courses jointly planned with local

firms, simulations and problem-solving exercises based on actual situations in industry, and the setting up of mini-companies in school with advice from local businesses. The factory experiment involves apprentices and managers in lifeskills courses, which stress the understanding of how small groups work and how to collaborate effectively in solving problems: school teachers are intrigued to find a diesel engine factory training its staff in social dynamics and communication skills, and are anxious to discuss implications for school work.

The national Schools Industry Project reported that its experience of linking adults other than teachers with schools to help pupils understand modern industrial society "raised some fundamental questions for many teachers and industrialists about the nature of schooling". Teachers have welcomed contact with the world outside their insulated classrooms, and the project found little opposition from them to working with non-professionals, who were viewed as a valuable resource for the professional teacher to manage. There was a tendency for industrialists' interests to spread beyond the original boundaries, and schools welcomed rather than trying to contain this influence: for example, a trade unionist, invited to contribute to a module on industrial relations, enquired how the school was handling issues related to information technology, and provided a union perspective on these issues (Jamieson and Lightfoot 1982).

Springfield School, Cleveland, transformed its whole social education programme, with the help of local managers and trade unionists. In a progress report, the Head wrote:

> "By far the most important achievement at Springfield has been the way in which teachers and 'outsiders' have got together, focused on the needs of youngsters and enhanced the work and abilities of each other".
>
> (Gyte 1981)

The course that has emerged from this collaboration contained the following elements:

* Industrial visits, including briefing and de-briefing by members of the firm and teaching staff.

* A module on selection, recruitment and interviews, using local managers.

* A study of trade unions, with local union officials helping to organise simulation exercises.

* A unit on leisure, in which a range of local enthusiasts introduced their personal delights, from land-yachting to bowls.

* A challenging module on "Change and Alternatives", which considers problems students may face on leaving school, and which brings in unemployed young people to talk about "survival skills".

* A short course on small firms and the possibilities of "going it alone", in which local entrepreneurs worked with small groups of pupils.

* A series on information technology and its local impact, with some work based on a computer provided by the Department of Industry.

* One week's experience of work in a local firm, with adequate time for de-briefing and evaluation.

Illustrating the tendency of this sort of work to spread its influence in many directions, Gyte notes two current developments: setting up a co-operative workshop for unemployed school leavers, and "extending the principles and processes of the social education course into other areas of the curriculum".

School-industry liaison can have important implications for authority relations within the school. The national Industry project noted that

> "Treating pupils in a significantly different manner at certain times (for example, fostering co-operativeness rather than individual competitiveness), as a colleague rather than as a child, has implications for their behaviour and treatment at other times in the school."
>
> (Jamieson and Lightfoot 1982)

At Springfield School it was observed that contact with people from industry acted as an in-service training experience for teachers. One pupil commented in an evaluation session: "I think the teachers have changed, too - they've got more confidence."

The evidence is as yet fragmentary, but it suggests that the involvement of outsiders can give the new life-related elements in the curriculum authenticity and authority. This is a different sort of authority from that enjoyed by the academic elements which they replace, and on which the teachers' professional identity was founded, but it can have the same function in sustaining teachers' morale. Far from underdermining the teachers, the contact with outsiders helps to counter that feeling of inadequacy which a subject-specialist is bound to feel when he moves away from his own discipline into the shadowy and uncertain world of lifeskills.

2.4 Other school initiatives

Not all schools work as closely with local industry, and the following examples show schools innovating alone, or in collaboration with a small number of other local schools.

2.4.1 Monkwearmouth School, Sunderland, includes in its social education programme a module on technology with the following aims:

> "To develop a realization of the impetus and relevance of technological growth in relation to social organisation, relationships, political thinking and the environment.
>
> To encourage a questioning attitude towards technological growth, in respect of work, job satisfaction, and control.

To develop the capacity for individual or group action in possible areas of conflict.

To develop the skills of investigation, comparative analysis and communication.

To develop a totally new concept of what is and what is not work, appropriate to the new and developing situation in Western society."

(Monkwearmouth 1979)

2.4.2 An experimental course for 12 year olds on "Information" devised by Norman Longworth, with the support of IBM, has been used in a number of schools, including one in York. It focusses on the central role of information in modern society, and introduces students to some key ideas about its collection, analysis, storage, processing and communication. These ideas are learned through realistic examples - including police work, public utilities, transport, and the school's own information system. The theme brings together material as diverse as road signs, school rules, power station planning and witnesses in the law courts, all contributing to the development of a way of viewing information in social systems (Longworth 1976). A local school using the material reported that the examples dated rapidly, but the central ideas were of value in laying a base for later work on understanding social systems, and for the development of computer skills.

2.4.3 A current project which is trying to balance the goals of critical thinking and social skill is the Salford 14-16 Project, run in collaboration with the York Centre for the Study of Comprehensive Schools, and a group of schools in the Manchester area. The team consists of two seconded teachers, one with experience in vocational guidance, the other an English teacher. They aim to identify everyday situations that young people find difficult, involving, for example, the police, doctors and nurses, bus conductors, officials of the welfare services, employers, and other young people. Ideas for active work are being developed which should both enhance students' understanding of the situation, and make them more capable of handling it skilfully. Sources will include the personal experience of students and other members of the community, as well as film and TV clips and written accounts.

2.4.4 Working with the 16-19 age range, Queen Elizabeth Sixth Form College, Darlington has broken out of the familiar pattern of General Studies - the pattern sustained since 1973 by the publications of the York General Studies Project - in which classes discuss current controversial issues on the basis of small collections of source material which put contrasted viewpoints. The most recent of these collections was on Information Technology (Smith & Campbell 1981), and the previous collection had dealt with the controveries surrounding energy policy. Charles Walker had organised courses on these lines at the college for some years but felt that they were as "information orientated and teacher centred" as the specialist Advanced Level courses which they were supposed to supplement. Could a course be developed which was explicitly skill orientated and student centred, but which also developed understanding of key social issues, policy alternatives and value conflicts?

He worked with a team of fellow teachers to transform "what was a stagnant General Studies course based on an options roundabout to one

which attempts to put into practice the proposals on lifeskills" (Walker 1980). Three compulsory courses are taken. In one, students "explore the different ways decisions are made... to analyse the effectiveness of individuals and groups in problem-solving and decision-making, and to introduce some...simple organisational and analytical skills." The other two courses provide opportunities to apply these skills and develop them in realistic contexts, one at the level of personal decisions (e.g. money management, self-presentation, rights) the other in matters of public policy (currently a study and simulation exercise on a proposal for a nuclear power station, and involving pressure groups, the media, scientific advisers and government). Walker reports that the new course is seen as useful, relevant and authentic: "General Studies is now talked about, not in a derisive way, or an apologetic way, but enthusiastically and constructively by staff, students and parents." The effect on staff - all experienced and well qualified subject specialists - has been striking: "Teachers talk to each other about their methods and aims continuously, for we are all in a new situation in wich the traditional role of the Advanced Level teacher is completely set aside."

2.5 Combining understanding and skill

These examples illustrate what could become an important development in social education, humanities and general studies, formed by the convergence of two traditions.

On the one hand there is the tradition that seeks understanding of major social issues by means of disciplined study. This may involve evidence-based open discussion on the lines of the Humanities and General Studies Projects, or it may be more explicitly based on the social science disciplines, taught separately or in an inter-disciplinary form by a team representing several departments.

The other tradition emphasises transferable skills that will be useful in everyday life. It is well established in further education colleges, in remedial education, and in special units for disaffected pupils. It also appears in courses on thinking (where the work of Edward de Bono has been influential), on study skills and the use of libraries and other information sources, and in the work of vocational guidance and counselling staff on presentation of self, interpersonal relations, transactional analysis, assertiveness training, personal decision making, and ways of handling stress.

These two ways of interpreting the phrase "social education" appear to be converging. Work experience placements, community service schemes, and some social studies courses (such as those derived from the Nottingham Social Education Project - see Rennie 1974) emphasise the development of skills of human relationships, communication and practical action, as well as the understanding of issues. Initiatives in peace education stress experiential methods and inter-personal skills - education for peace rather than merely about peace. Keith Webb's MA research (1980) showed the possibilities of combining political skill development with the more familiar aims of political knowledge and attitudes. Understanding social problems without the practical skill to do something about them (what Webb called "informed and enlightened impotence") is increasingly seen as inadequate preparation for life in a changing society. Conversely, the development of skills out of context, divorced from an understanding of the actual social and moral problem-areas in which they might be

deployed (Webb's "ignorant but effective unscrupulousness") is equally inadequate. Better to practise and sharpen skills of political and social action in naturalistic settings, dealing with real issues like nuclear policy or unemployment, than to learn skills or study issues separately.

But which issues, and which skills? There are choices to be made about which social problems students need to understand, and which skills will in reality be found effective in handling these problems. The academic training British teachers receive is not as helpful as it might be for this sort of planning. The teams at Springfield and Darlington have pushed into unknown territory - apparently with success. It might be worth looking at a less successful venture, which highlights the problem of relating social education to the student's world, and raises problems of teacher perception and teacher education.

2.6 The problem of authenticity

Courses that try to develop understanding and skill relating to everyday life are not always received the way teachers intend, and there may be an uncomfortable gap between the rhetoric of the curriculum planner and the reality of the classroom. An MA study by a Yorkshire teacher, Fred Middleton, examined a course designed to increase students' social competence (Middleton 1979). The course, given the forbidding title "Social and Moral Education", was constructed by a team of teachers around the "needs" of students and aimed to prepare them for adult life. But only on rare occasions did pupils' conceptions of their needs match those assumed by their teachers. Misunderstanding was mutual, for the pupils did not appear to appreciate the distinctive aims of the course that should have set it apart from conventional subject courses. For most of the time, as a pupil put it,

> "Social and Moral is like any other subject. Teachers talk about it, write it on the board, and we copy it down in our books."

Some pupils admitted it might have relevance for some of their peers, but never for themselves. One of the top stream class (a member of the elite, being entered for public examinations) said,

> "Social and Moral is not really a subject for me. It's more a subject for kids of low ability."

Middleton concluded that teachers were adhering too rigidly to the syllabus, which was expressed as a list of topics. This "denied them any real possibility of a meaningful exploration of pupils' needs." The "credibility strain" was heightened by "teachers' neglect of a discussion of political and other potentially contentious issues perceived by the pupils as being important: 'He never talks about what we want to', said one pupil, 'He always hogs the talking'." But Middleton noted the difficulties faced by any teacher who tried to break out of the conventional framework, and he quoted pupils' comments on those who made the attempt:

> "She doesn't tell us what to do, so we don't do anything.

> He always asks us what we think - he never lets on what

he's thinking.

It can't be as good as the other subjects because there's no writing in it.

We don't talk to teachers because they laugh at you and talk about you behind your back in the staffroom."

Lifeskills under whatever name is clearly a high risk area of teaching. One of the many risks it runs is that of being misunderstood by the students. This may sometimes be because the students - their needs, their lives, their problems, and the skills required to solve them - are misunderstood by the staff. Clearly, any course that aims to develop students' social competence in handling real-world problems needs continuous, sensitive monitoring of the students' perspective. It is not unreasonable to expect teachers to deploy in their own work the social skills they aim to teach: in this case, the ability to stand in someone else's shoes.

2.7 Implications for teacher education

An example of failure was necessary to balance what may well be an over-optimistic interpretation of current trends. It would be easy to illustrate the difficulties faced by teachers, and the perilous state of their morale, as a consequence of severe cuts in funds, falling rolls, school re-organisation, and the strain between traditionally autonomous schools and an increasingly interventionist stance on the part of central and local government. But I share the guarded optimism of the Schools Council Working Party on Social and Personal Education, which came to the conclusion that "The difficulties are manageable".

The Working Party called for more school-based in-service education, and for courses which whole staffs take together, to prepare them for a review of the whole curriculum. This seems a more appropriate strategy than sending individuals on courses and hoping that they will influence colleagues on their return.

There may also be a need for some special training for individuals, once the school's needs are identified, to provide expert consultancy within the team on matters that are likely to arise as the new curriculum develops. The team needs to decide on a division of labour. For example, it is probably unnecessary for all the teachers to learn to programme the microcomputer, especially if the opportunity cost is that nobody has time to develop contacts with local firms using information technology, or to become the school expert on the broader economic effects of I.T.

Apart from developing a particular area of knowledge to contribute to the team, what do all teachers need in the information age as part of their continuing self-education? In one word, communication. They need channels for purposeful discussion other than those of the traditional subject sub-cultures; opportunities to work with teachers of all subjects and with adults other than teachers; and encouragement to listen more closely to their pupils. There are many ways in which to achieve this aim. From working with schools and teachers over the past five years on the implications of the new technologies, I would identify five particularly valuable types of experience, the opportunity for which can be created in, around and between schools.

2.7.1 Learning about the changes taking place in industry, the economy and society, by out-of-school experience in workplaces, by easy access to up-to-date sources of information, possibly by means of an electronic database, and by discussion with other teachers and with people in local industry and commerce;

2.7.2 Obtaining information about relevant work in other schools, again possibly by means of a database, linked with a system of release for visits and discussions;

2.7.3 Developing new teaching skills, particularly those related to guidance and social skill training rather than to the teaching of their main subject, by means of observation, practice, feedback and discussion with a friendly critic;

2.7.4 Playing an active part in continuous research on the work of their own school, to provide information - especially from the students' perspective - to guide their own reflection and the school's self-evaluation;

2.7.5 Participating fully in collaborative curriculum planning, involving staff from all departments, students, and adults other than teachers, with provision for critical reflection on this whole process.

CONCLUSION

I suggested in the first part of the paper that schools should both respond to the demands of industry and government and at the same time maintain their own priorities - critical thinking, a concern for values, and access to non-commercial forms of cultural expression. The examples I have quoted show that at least some schools are attempting to keep both sets of priorities alive.

Others may go overboard for vocational preparation and narrowly defined lifeskills. Some will resist attempts to invade their academic citadel, and go on providing the traditional subject-courses for as long as there is a clientele. Some teachers I have talked to see their critics as materialistic philistines, or detect a national right-wing conspiracy to impose education for conformity. There is false polarisation and caricature on both sides, to offset the evidence of convergence and reconciliation.

The pessimistic view is that a combination of technological change, economic recession and right wing government will push us towards a new version of Huxley's Brave New World, with academic education for the Alphas, technical training for the Betas, and leisure education for the rest. I incline - guardedly - towards the optimistic view. Given adequate communication and regrouping of forces within education, the two sets of aims are compatible as guidelines for the core curriculum offered to all pupils in our comprehensive schools: economic survival and individual well-being; capability and a critical spirit; skill and understanding; social competence and moral autonomy. The micro-chip has triggered revolutions in all sorts of unlikely places: perhaps it will also work its magic in the social area of the curriculum.

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